

REMARKS/ARGUMENTS

Reconsideration of this application is requested. Claims 1, 3-12 and 15-24 are pending in this application of which claims 1, 3-12 and 20-24 are directed to elected subject matter.

Counsel notes that the examiner has not listed claims 15-19 as being in the application but withdrawn from consideration in the Office Action Summary included with the current Official Action. These claims were never canceled, simply withdrawn as directed to non-elected subject matter. Clarification in the next communication would be appreciated.

The claims have been amended in order to more particularly point out and distinctly claim that which applicants regard as their invention and to incorporate the features of claims 2, 13 and 14 into claim 1. By this Amendment, the thicknesses of the first film and the second film are specified and the first film is applied to the substrate. Basis for this amendment will be apparent and certainly there is no subject matter being added. These amendments also serve to provide novelty to the claims and thus overcome both of the outstanding rejections.

In the current Official Action two newly cited documents have been cited and applied to various sets of claims. Both rejections are based upon alleged anticipation. With the amendments made to the claims, as noted above, anticipation is no longer relevant so applicants will address these two rejections on the basis of "obviousness" again in order to advance examination.

The present invention seeks to combine advantageous properties for a solar cell. These properties include high transparency of the electrode for incident light, a good conduction of the current generated in the active layer, and capture of the incident light in the solar cell.

Capture of the incident light in the solar cell can be achieved by using layers that have specific crystallographic morphology giving rise to multiple internal reflections. However, such layers normally have a bad conductivity.

The combination of the two specific layers as defined in amended claim 1 advantageously allows achieving the above-mentioned desirable properties. The inventors found that an electrode with both good electrical conductivity and optimal surface morphology can be obtained by using a coating which comprises a first film applied to the substrate and a second film on top of the first film, both films comprising a transparent conductive oxide and an electron donor, where the second film comprises relatively at least 10 percent less electron donor than the

first film.

It is surprising that this specific combination of features works together in an efficient manner and yields the desired result, namely a coating that on the one hand efficiently captures incident light and on the other hand provides a good conduction of the current generated in the active layer.

Yoshimi et al describe a thin film photoelectric device comprising a dual layer transparent electrode on a substrate. As follows from paragraphs 36 and 37 of Yoshimi et al, the 1st transparent conducting SnO₂ layer (101) is formed using 1.0 mol% fluorine dopant gas, while the 2nd transparent conducting SnO₂ layer (102) is formed using 1.5 mol% fluorine dopant gas.

Hence, Yoshimi et al in fact **teach away**¹ from the present invention, by suggesting the skilled person to use a dual layer transparent conductive oxide, wherein the layer closest to the substrate has a higher concentration of election donor. Based on this document, the skilled person would not arrive at the subject-matter of the present invention.

The publication of Fukuyoshi et al does not relate to the technical field of solar cells, but instead is directed to an electrode plate for a display device. Fukuyoshi et al does not relate in any way to the technical problem outlined above which underlies the present invention. The disclosure of Fukuyoshi et al is silent with respect to the capture of light. However, the skilled person will immediately recognize that, in the development of displays, light scattering in the transparent electrode should be minimized.

Although, the combination of layers 12a and 12b in the Figure of Fukuyoshi et al can be considered a dual layer transparent conductive oxide, the thickness of the second layer 12b (90 nm) is considerably lower than the lower limit of the thickness for the second layer defined in amended claim 1 (300 nm). The relatively thick second 1 of the present invention advantageously allows for a higher average particle size of the transparent conductive oxide

¹ An important consideration in determining obviousness is "teaching away" from the claimed invention by the prior art. *In re Dow Chemical Co.*, 837 F.2d 469, 473 (Fed. Cir. 1988). A reference teaches away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant. A reference will teach away if it suggests that the line of development flowing from the reference's disclosure is unlikely to be productive of the result sought by the applicant. *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994); *see also KSR*, 127 S. Ct. at 1739-40 (explaining that when the prior art teaches away from a combination, that combination is more likely to be nonobvious).

crystals in the second layer, which in turn give rise to better internal reflections of the incident light and as a consequence better capture of the incident light.

Furthermore, in order to have good internal reflections it is important that the layer thickness of the second layer of the present invention is in the order of the wavelength of the incident light.

In addition, it is noted that in accordance with the present invention the first layer (having a thickness of 50-500 nm as amended claim 1 specifies) acts as an initiation layer for obtaining a specific desired morphology in the second layer (international publication, page 2, lines 22-27). Neither Yoshimi et al nor Fukuyoshi et al even hint at this advantageous feature of the present invention.

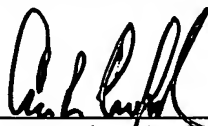
Kariya et al and Kawashima et al do not even disclose a dual layer transparent conducting oxide, wherein the second layer has 10 wt.% less electron donor than the first layer.

From the above it follows that the present invention is not obvious in view of the cited prior art.

Respectfully submitted,

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